JC09 Rec'd PCT/PTO 02 MAR 2001
09/786196

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
REQUEST FOR FILING NATIONAL PHASE OF
PCT APPLICATION UNDER 35 U.S.C. 371 AND 37 CFR 1.494 OR 1.495

PTO MAR 02 2001 JC09

To: Hon. Commissioner of Patents
Washington, D.C. 20231

00909

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

Atty Dkt: P 277968 /114419-3/DV/MB
M# /Client Ref.

From: Pillsbury Winthrop LLP, IP Group: Date: March 2, 2001

This is a **REQUEST** for **FILING** a PCT/USA National Phase Application based on:

1. International Application	2. International Filing Date	3. Earliest Priority Date Claimed
PCT/CH98/00376	2 September 1998	2 September 1998
⇧ country code	Day MONTH Year	Day MONTH Year (use item 2 if no earlier priority)

4. Measured from the earliest priority date in item 3, this PCT/USA National Phase Application Request is being filed within:

(a) ☐ 20 months from above item 3 date (b) ☒ 30 months from above item 3 date,

(c) Therefore, the due date (unextendable) is March 2, 2001

5. Title of Invention FLAT DISPLAY AND MOBILE RADIO TELEPHONE WITH A FLAT DISPLAY

6. Inventor(s) KELLER, Judith et al

Applicant herewith submits the following under 35 U.S.C. 371 to effect filing:

7. ☒ Please immediately start national examination procedures (35 U.S.C. 371 (f)).

8. ☐ **A copy of the International Application** as filed (35 U.S.C. 371(c)(2)) is transmitted herewith (file if in English but, if in foreign language, file only if not transmitted to PTO by the International Bureau) including:

a. ☐ Request;
b. ☐ Abstract;
c. _____ pgs. Spec. and Claims;
d. _____ sheet(s) Drawing which are ☐ informal ☐ formal of size ☐ A4 ☐ 11"

9. ☒ **A copy of the International Application has been transmitted by the International Bureau.**

10. **A translation of the International Application** into English (35 U.S.C. 371(c)(2))
a. ☒ is transmitted herewith including: (1) ☒ Request; (2) ☒ Abstract;
(3) 6 pgs. Spec. and Claims;
(4) 2 sheet(s) Drawing which are:
☐ informal ☒ formal of size ☒ A4 ☐ 11"
b. ☐ is not required, as the application was filed in English.
c. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.
d. ☐ Translation verification attached (not required now).

RE: USA National Filing of PGT /CH98/00376

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11. ☒ **PLEASE AMEND** the specification before its first line by inserting as a separate paragraph:
a. ☒ --This application is the national phase of international application PCT/CH98/00376 filed September 2, 1998 which designated the U.S.--
b. ☐ --This application also claims the benefit of U.S. Provisional Application No. 60/ _____, filed _____ .--

12. ☒ Amendments to the claims of the International Application **under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., before 18th month from first priority date above in item 3, are transmitted herewith (file only if in English) including:**

13. ☒ PCT Article 19 claim amendments (if any) have been transmitted by the International Bureau

14. ☒ Translation of the amendments to the claims **under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., of claim amendments** made before 18th month, **is attached (required by 20th month from the date in item 3 if box 4(a) above is X'd, or 30th month if box 4(b) is X'd, or else amendments will be considered canceled).**

15. **A declaration of the inventor** (35 U.S.C. 371(c)(4))
a. ☒ is submitted herewith ☒ Original ☐ Facsimile/Copy
b. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.

16. **An International Search Report (ISR):**
a. Was prepared by ☒ European Patent Office ☐ Japanese Patent Office ☐ Other
b. ☒ has been transmitted by the international Bureau to PTO.
c. ☒ copy herewith (2 pg(s).) ☒ plus Annex of family members (1 pg(s).).

17. **International Preliminary Examination Report** (IPER):
a. ☒ has been transmitted (if this letter is filed after 28 months from date in item 3) in English by the International Bureau with Annexes (if any) in original language.
b. ☐ copy herewith in English.
c.1 ☒ IPER Annex(es) in original language ("Annexes" are amendments made to claims/spec/drawings during Examination) including attached amended:
c.2 ☒ Specification/claim pages #1, 1a, 5 & 6 claims # 1 - 12
Dwg Sheets #
d. ☐ Translation of Annex(es) to IPER **(required by 30th month due date, or else annexed amendments will be considered canceled).**

18. **Information Disclosure Statement** including:
a. ☐ Attached Form PTO-1449 listing documents
b. ☐ Attached copies of documents listed on Form PTO-1449
c. ☒ A concise explanation of relevance of ISR references is given in the ISR.

19. ☒ **Assignment** document and Cover Sheet for recording are attached. Please mail the recorded assignment document back to the person whose signature, name and address appear at the end of this letter.

20. ☒ Copy of Power to IA agent.

21. ☐ **Drawings** (complete only if 8d or 10a(4) not completed): ___ sheet(s) per set: ☐ 1 set informal; ☐ Formal of size ☐ A4 ☐ 11"

22. Small Entity Status ⌀ ☒ is **Not** claimed ☐ is claimed (**pre**-filing confirmation required)
22(a) _____ (No.) Small Entity Statement(s) enclosed (since 9/8/00 Small Entity Statements(s) not essential to make claim)

23. **Priority** is hereby claimed under 35 U.S.C. 119/365 based on the priority claim and the certified copy, both filed in the International Application during the international stage based on the filing in (country) _____ of:

	Application No.	Filing Date		Application No.	Filing Date
(1)			(2)		
(3)			(4)		
(5)			(6)		

a. ☒ See Form PCT/IB/304 sent to US/DO with copy of priority documents. If copy has not been received, please proceed promptly to obtain same from the IB.
b. ☐ Copy of Form PCT/IB/304 attached.

RE: USA National Filing of PCT/CH98/00376

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24. Attached: Form PCT/IB/306

25. **Preliminary Amendment:** ATTACHED

25.5 Per Item 17.c2, **cancel original** pages #_____, claims #_____, Drawing Sheets #

26. **Calculation of the U.S. National Fee (35 U.S.C. 371 (c)(1)) and other fees is as follows:**
Based on amended claim(s) per above item(s) ☒ 12, ☒ 14, ☒ 17, ☒ 25, ☐ 25.5 (hilite)

Total Effective Claims	12	minus 20 =	0	x $18/$9	= $0	966/967
Independent Claims	1	minus 3 =	0	x $80/$40	= $0	964/965
If any proper (ignore improper) Multiple Dependent claim is present,				add$270/$135	+0	968/969

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(4)): →→ **BASIC FEE REQUIRED, NOW** →→→→

A. If country code letters in item 1 are **not** "US","BR","BB","TT","MX","IL" "NZ", "IN" or "ZA"

See item 16 re:

1. Search Report was not prepared by EPO or JPO - - - - - - - - -	add$1000/$500		960/961
2. Search Report was prepared by EPO or JPO - - - - - - - - - - - -	add$860/$430	+860	970/971

SKIP B, C, D AND E UNLESS country code letters in item 1 are "US","BR","BB","TT","MX","IL", "NZ", "IN" or "ZA"

(X) → ☐ B.	If USPTO did not issue both International Search Report (ISR) and (if box 4(b) above is X'd) the International Examination Report (IPER), -	add$970/$485	+0	960/961
(only) (one) → ☐ C.	If USPTO issued ISR but not IPER (or box 4(a) above is X'd), -	add$710/$355	+0	958/959
(of) (these) (3 4) → ☐ D.	If USPTO issued IPER but IPER Sec. V boxes not all 3 YES, -	add$690/$345	+0	956/957
→ ☐ E.	If international preliminary examination fee was paid to USPTO and Rules 492(a)(4) and 496(b) satisfied (IPER Sec. V all 3 boxes YES for all claims), - - - - - - - - - - - - -	add $100/$50	+0	962/963

27. **SUBTOTAL =** $860

28. If Assignment box 19 above is X'd, add Assignment Recording fee of ----$40 +40 (581)

29. Attached is a check to cover the - **TOTAL FEES** $900

Our Deposit Account No. 03-3975
Our Order No. 60237 (C#) 277968 (M#)

00909

CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 and 492 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos. shown above for which purpose a duplicate copy of this sheet is attached.
This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filed

Pillsbury Winthrop LLP
Intellectual Property Group

By Atty: Dale S. Lazar **Reg. No.** 28872

Sig: _____ **Fax:** (202) 822-0944
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Atty/Sec: DSL/mhn

NOTE: File in duplicate with 2 postcard receipts (PAT-103) & attachments.

09/786196
JC02 Rec'd PCT/PTO 0 2 MAR 2001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION OF

KELLER, Judith et al

Appln. No.: None yet Examiner: Unassigned

Filed: March 02, 2001 Group Art Unit: Unassigned

TITLE: FLAT DISPLAY AND MOBILE RADIO TELEPHONE WITH A FLAT DISPLAY

March 2, 2001

PRELIMINARY AMENDMENT

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

Entry and consideration of the following amendments in the above-identified application are requested.

IN THE CLAIMS:

Please amend the claims as follows:

Claim 4, line 1, change " one of the claims 1 to 3 " to - - claim 1 - -

Claim 5, line 1, change " one of the claims 1 to 4 " to - - claim 1 - -

Claim 6, line 1 change " one of the claims 1 to 5 " to - - claim 1 - -

Claim 7, line 1, change " one of the claims 1 to 6 " to - - claim 1 - -

Claim 8, lines 1 and 2, change " one of the claims 1 to 7 " to - - claim 1 - -

Claim 10, line 1, delete " or 9 "

Claim 11, line 1,change " one of the claims 8 to 10 " to -- claim 8 --

Claim 12, line 1, change "one of the claims 8 to 11" to --claim 8--

09/964,901 - 09/28/01

REMARKS

The amendments to the claims were made to eliminate the multiple dependencies. No new matter was intended to be added, nor is any new matter believed to have been added. Accordingly, an early action on the merits is earnestly solicited.

Respectfully submitted,

PILLSBURY WINTHROP LLP

By _____

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APPLICATION UNDER UNITED STATES PATENT LAWS

Atty. Dkt. No. PW 277968/114419-3/DV/MB
(M#)

Invention: FLAT DISPLAY AND MOBILE RADIO TELEPHONE WITH A FLAT DISPLAY

Inventor (s): KELLER, Judith
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Express Mail Label No. EL 696 469 569 US

This is a:

- ☐ Provisional Application
- ☐ Regular Utility Application
- ☐ Continuing Application
 - ☒ The contents of the parent are incorporated by reference
- ☒ PCT National Phase Application
- ☐ Design Application
- ☐ Reissue Application
- ☐ Plant Application
- ☐ Substitute Specification
 Sub. Spec Filed _____
 in App. No. _____ / _____
- ☐ Marked up Specification re
 Sub. Spec. filed _____
 In App. No _____ / _____

SPECIFICATION

Flat Display and Mobile Telephone with a Flat Display

The present invention relates to a flat display. In particular, the present invention relates to a flat display for an electrically autonomous device, for example a mobile radio telephone.

Mobile radio telephones are becoming more and more miniaturized, and therefore can easily be taken along in a pocket or in a handbag. The same also applies for other portable electronic devices, such as, for example, pocket calculators, laptops, palmtops, etc.

Described in the U.S. patent publication US 5,566,224 is a radio-based communications device which is linked to a display on which information can be displayed by the communications device. According to the patent publication US 5,566,224, the display can be brought to show the information in a mirror surface behind a transparent window, or the display can be positioned in such a way that it projects the information on a portion of the mirror surface. Referred to, moreover, in the patent publication US 5,566,224 is the possibility that portions of the mirror surface are controllable from a reflecting into a non-reflecting, transparent state, so that information which is shown on the display, installed behind the mirror surface, are visible on the front side of the mirror surface for the viewer.

It is therefore the object of this invention to provide a mobile radio telephone with other functions, which are made use of again and again also when en route.

According to this invention, this object is achieved through the features of claim 1.

In particular, this object is achieved through a flat display which can be controlled electrically so that the display surface can be made reflecting.

In this way the display of the device can also be used as a practical pocket mirror.

The display can preferably be controlled electrically in order to become reflecting when no information is being shown, in particular in standby mode. In another preferred variant of the invention, also only one portion of the display surface can be made reflecting; information and/or advertisements can be displayed on the remaining portion of the display surface. In this way, the users can be made aware, in an effective way, of important information and in particular

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of company names and logos of service providers.

The invention will be better understood with the aid of the description illustrated by the attached figures:

Figure 1 shows a view from above of a mobile radio telephone with a display according to the invention controlled and used as a mirror.

Figure 2 is a view from above of the same mobile telephone, where, however, one portion of the display is controlled as a mirror while information is being shown on the remaining portion.

Figure 3 is a view from above of the same mobile radio telephone, where , however, information is being shown on the entire display.

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Figure 4 is a very much enlarged section of a display according to the invention.

Figure 1 shows a mobile radio telephone 1 in standby mode with a display 10 according to the invention. The display 10 according to the invention is controlled electrically by a display driver (not shown) in such a way that it can be used as a reflecting mirror in which the user is reflected. The reflecting or non-reflecting mode of the display 10 can preferably also be selected by the user with an operating element, for example an operating key 120. Other functions of the mobile radio telephone can also be actuated with other operating elements 12. The mobile radio telephone preferably further comprises an identification card 13, for example a SIM (Subscriber Identity Module) card, in order to identify the user in a mobile radio network. The card 13 preferably contains a processor (not shown), which can also control the display 10. The mobile radio telephone, or respectively the identification card, can preferably receive short messages, for example SMS and/or USSD short messages, which are transmitted in the mobile radio network from another terminal, and with which the state of the display can also be controlled.

Figure 2 shows the same mobile radio telephone where only one portion of the display 10 is controlled as a mirror, however, while information is being displayed on the remaining portion. The display is controlled in this state, for example, when a message comes in or when the service of an external service provider, for example of a financial institution or of an information vendor, is availed of. Information, for example information about the selected service, in particular an identification of the calling party or respectively of the service provider, for example the call number, the name and/or the logo of this service provider, is shown in this case over the reflecting background.

Figure 3 shows the same mobile radio telephone in a state where the entire surface of the display 10 is used for display of information.

Figure 4 shows a section of a display according to the invention. The display 10 comprises a transparent outer layer 100 of non-reflecting glass or synthetic material, a foreground display layer 101 under the upper layer 100 with a first liquid crystal element, a background display layer 102 under the layer 101 with a second liquid crystal element, a reflecting layer 103 under the layer 102 and a substrate 104 under the reflecting layer 103.

The foreground display layer 101 comprises a conventional matrix display, for example a passive or active liquid crystal element. The layer 101 is preferably

constructed as a matrix display so that each pixel can be individually controlled. If a first set of voltages is applied by the display driver (not shown) to the electrodes (not shown) which control a pixel, this pixel takes on a first color, preferably black; if a second set of voltages is applied, preferably when zero voltages are applied, this pixel becomes transparent so that the viewer can see the background layers 102 or 103. In a variant, the pixels can take on another color or different levels of gray or shades of color instead of, or in addition to, black.

The background display layer 102 comprises a conventional matrix display, for example a passive or active liquid crystal element, which can be changed electrically from a transparent state into another colored state, for example into a white state. The layer 102 is preferably constructed as a matrix display so that each pixel can be controlled <to be> transparent or white individually. The layer 102 is preferably transparent when no voltage is being applied to the electrodes. In a variant, the pixels can take on another color or different levels of gray or shades of color instead of, or in addition to, white.

One skilled in the art will understand that the two display layers 101 and 102, depending upon the liquid crystal technology applied, can consist of several different layers, including, for example, several electrode layers, glass layers, liquid crystal layers, possibly polarization layers, etc.

The layer 103 is made up, for example, of an aluminum film or of another reflecting metal, and reflects the light outwardly. The inner layer 104 is a substrate, for example of metal or synthetic material, in order to make the entire display more robust. The layers 103 and 104 can also be made of synthetic material, for example if the display has to be flexible.

Information, for example text and/or pictures, are shown preferably in black with the layer 101 over a white background 102, as illustrated in Figure 3. When, however, the display layer 102 is transparent, information can be shown in black over a reflecting background, as shown in Figure 2. When both layers 101 and 102 are transparent, preferably when no voltage is being applied, the viewer sees only the reflecting aluminum layer 103, in which he can be reflected.

One skilled in the art will understand that the display according to the invention does not have to be achieved with liquid crystal displays, but that other types of flat matrix display technologies can also be applied within the framework of this invention. More than two display layers 101 and 102 can also be used in order to make possible colored displays or more complex illustrations, for example. The number of pixels in each layer can be very different, depending

upon the application, for example between 30 x 30 to 1000 x 1280 pixels. It is also possible within the framework of this invention to use a background display layer 102 which is not controlled as a matrix; in this case the entire layer is either colored (white) or transparent. The size and shape of the various layers can be different for certain applications so that, for example, only one portion of the display can be made reflecting. Depending upon applied technology, each pixel of the background display layer 102 can be changed from a second colored state – for example white – into a reflecting state; in this case, the reflecting layer 103 becomes unnecessary. The display 10, in particular the reflecting layer 103, can also be concave or convex in order to control the reflection angle.

The present invention makes it possible to use mobile devices with a display also as practical pocket mirrors. Moreover the device is given an unusual and exclusive design. Finally, users can be made aware of important or advertising information in a very effective way in that this information is displayed over a reflecting background.

DE 299 05 454 U1

Claims

1. A flat display (10) for an electrically autonomous device (1) on which information is displayable, and which flat display is electrically controllable to become reflecting, wherein

the flat display (10) comprises a background display layer (102, 103), which is changeable from a reflecting to a colored, non-reflecting state with electrical control signals, the background display layer (102, 103) comprising a display layer (102) which is controllable from a transparent into a colored state with electrical control signals, and a reflecting layer (103), and

the flat display (10) comprises a foreground display layer (101), disposed over the background display layer (102, 103), which foreground layer is changeable from a transparent state into a non-transparent state with other electrical control signals.

2. The flat display according to claim 1, wherein it is electrically controllable so that only a portion of said display becomes reflecting.

3. The flat display according to claim 2, wherein the text information and/or picture information is displayable on the remaining, non-reflecting portion of the display.

4. The flat display according to one of the claims 1 to 3, wherein the reflecting layer (103) is concave or convex.

5. The flat display according to one of the claims 1 to 4, wherein said foreground display layer (101) comprises a liquid crystal display.

6. The flat display according to one of the claims 1 to 5, wherein said background display layer (102, 103) comprises a liquid crystal display.

7. The flat display according to one of the claims 1 to 6, wherein said reflecting layer (103) comprises a film made of aluminum.

8. A mobile radio telephone (1) with a flat display according to one of the claims 1 to 7.

9. The mobile radio telephone according to claim 8, wherein it contains

an identification card (13), a processor is integrated into the identification card, and the reflecting state of the display is controllable with this processor.

10. The mobile radio telephone according to claim 8 or 9, wherein the reflecting state of the display is remotely controllable with data messages.

11. The mobile radio telephone according to one of the claims 8 to 10, wherein it comprises operating elements (120) to control the reflecting or non-reflecting state of the display (10).

12. The mobile radio telephone according to one of the claims 8 to 11, wherein the display is reflecting when the mobile radio telephone is switched off.

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Abstract

A flat display (10) for a mobile radio telephone or another autonomous electrical device (1), with a display surface on which information can be displayed. The display can be electrically controlled to make the entire display surface, or only a portion thereof, reflecting. Alphanumerical and/or advertising information can be displayed on the remaining, non-reflecting portion of the display surface.

Advantage: The mobile radio telephone can also be used as a practical pocket mirror. Advertisements and important information, for example service provider identifications, can be displayed particularly effectively on a reflecting background.

(Figure 4)

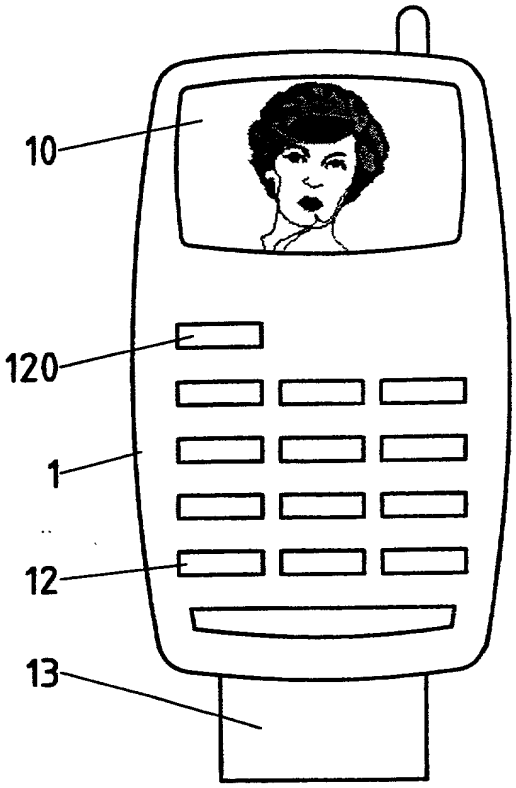


FIG. 1

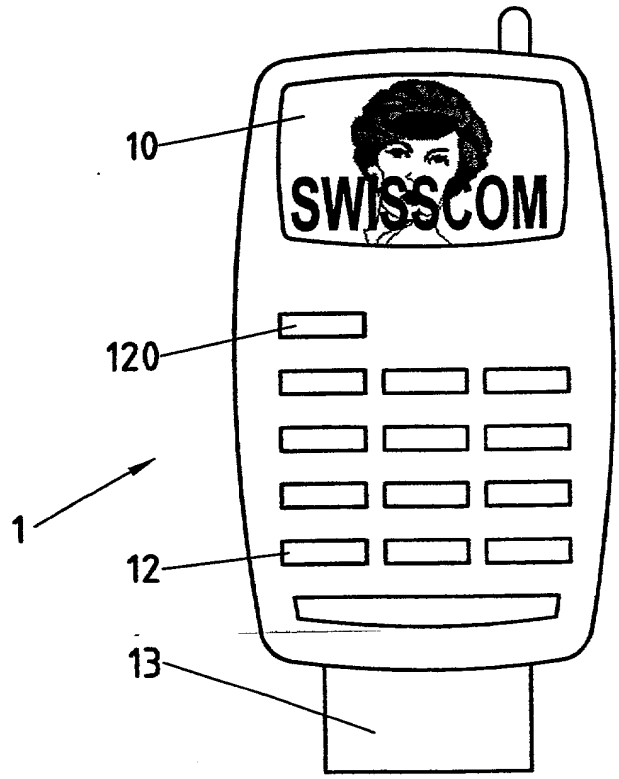


FIG. 2

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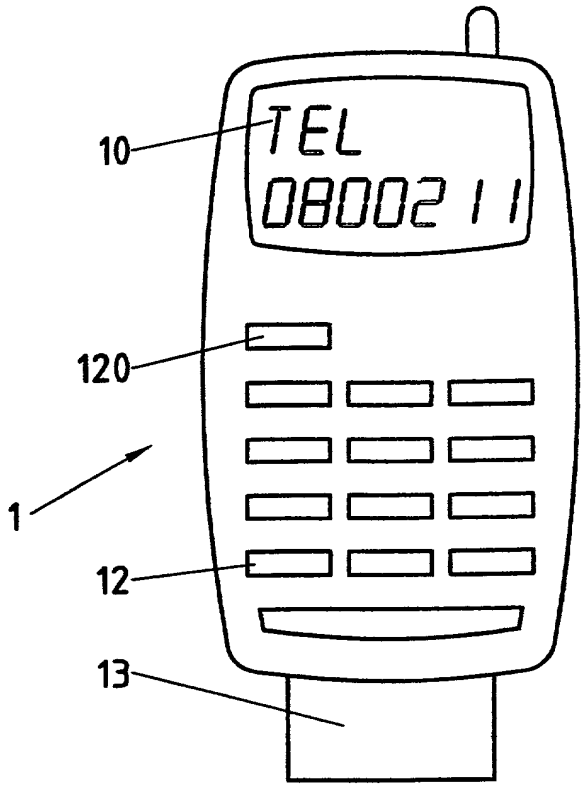


FIG. 3

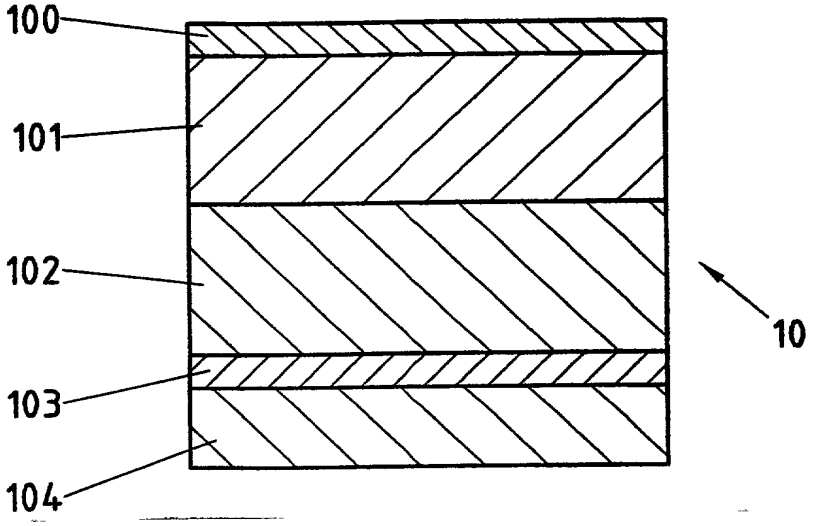


FIG. 4

FOR UTILITY/DESIGN CIP/PCT NATIONAL/PLANT ORIGINAL/SUBSTITUTE/SUPPLEMENTAL DECLARATIONS

RULE 63 (37 C.F.R. 1.63) DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM & S FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the **INVENTION ENTITLED**

Flat Display and Mobile Radio Telephone with a Flat Display

the specification of which (CHECK applicable BOX(ES))

X → ☒ is attached hereto.

BOX(ES) → ☐ was filed on _____ as U.S. Application No. _____/_____

→ → ☒ was filed as PCT International Application No. PCT/CH 98/00376 on 2 September 1998

and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S) Number	Country	Day/MONTH/Year Filed	Date first Laid-open or Published	Date Patented or Granted	Priority Claimed Yes	No
----	---	----				

I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S) Application No. (series code/serial no.)	Day/MONTH/Year Filed	Status pending, abandoned, patented	Priority Claimed Yes	No

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

Paul N. Kokulis	16773	Dale S. Lazar	28872	Mark G. Paulson	30793	Michael R. Dzwonczyk	36787
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Carl G. Love	18781	Kendrew H. Colton	30368	Ruth N. Morduch	31044	Adam R. Hess	41835
Kevin E. Joyce	20508	G. Paul Edgell	24238	Richard H. Zaitlen	27248		
George M. Sirilla	18221	Lynn E. Eccleston	35861	Roger R. Wise	31204		
Donald J. Bird	25323	Timothy J. Klima	34852	Jay M. Finkelstein	21082		
Peter W. Gowdey	25872	David A. Jakopin	32995	Anita M. Kirkpatrick	32617		

(1) INVENTOR'S SIGNATURE: Judith Keller Date: 20.02.2001

	First	Middle Initial	Family Name
	Judith	---	Blank nee KELLER
Residence	8500 Frauenfeld CHY	Switzerland	Switzerland
	City	State/Foreign Country	Country of Citizenship
Post Office Address (include Zip Code)	Wannenfeldstrasse 97, 8500 Frauenfeld (Switzerland)		

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(2) INVENTOR'S SIGNATURE: R. Ritter Date: 20.02.2001

	First	Middle Initial	Family Name
	Rudolf	...	RITTER
Residence	3052 Zollikofen CHY	Switzerland	Switzerland
	City	State/Foreign Country	Country of Citizenship
Post Office Address (include Zip Code)	Rossweidweg 8, 3052 Zollikofen (Switzerland)		

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(FOR ADDITIONAL INVENTORS, check box ☐ to attach PAT 116-2 same information for each re signature, name, date, citizenship, residence and address.)